120-2-27/37

A Method for the Investigation of Irregularity of Plastic Deformation.

(Fig. 2) uses a photo cell type StsV-3 (СЦВ-3) placed with its light source in the chamber 1. The channel for the registration of jump-like changes of the electrical resistance (channel R, Fig. 3) consists of a sensitive AC amplifier with a frequency band from 4-2000c/s and with the level of fluctuation noise as referred to the input, of the order of a few thousandths of μV. The experiments have shown that the instrument has a high degree of sensitivity and stability. A schematic diagram of the mechanical installation, the basic circuit diagram of channel 1, the basic circuit diagram of the channel R and a photograph of small jump-like deformations are given. There are 4 Slavic references.

SUBMITTED: November, 28, 1956.

ASSOCIATION: Institute of Physical Chemistry of the Academy of Sciences of the USSR. (Institut Fizicheskoy Khimii AN SSSR) Faculty of Chemistry of the Moscow State University imeni M. V. Lomonosov. (Khimicheskiy Fakul'tet MGU im. M. V. Lomonosova.)

AVAILABLE: Library of Congress.

Card 2/2

ROZHANSKIY, V. N.

126-3-20/34

AUTHORS: Rozhanskiy, V. N., Dekartova, N. V. and Bakeyeva, I. A.

TITLE: Relations governing the manufacture of zinc monocrystals by the method of zonal crystallisation. (Zakonomernosti vyrashchivaniya monokristallov tsinka metodom zonnoy kristallizatsii).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), 1957, Vol.4, No.3, pp. 527-530 (U.S.S.R.)

ABSTRACT: The method of growing long metallic monocrystals from polycrystalline wires, proposed by Likhtman et alii (1 and 2), has the disadvantage that the produced monocrystals may have any orientation and if a definite orientation is desired the main advantages of the method (simplicity and convenience) are lost. The authors of this paper studied a number of relations associated with growing of monocrystals by means of the mentioned equipment; they produced monocrystals of lengths up to 30 cm from wire containing 99.99% zinc and also from zinc-cadmium alloys; the orientation and the quality of the monocrystals were determined by means of X-rays. It was established that the orientation of the monocrystals depends on the speed of movement of the furnace, due to the ratio between the speed of growth of the crystal faces and the speed of movement of the furnace. At low

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126-3-20/34

Relations governing the manufacture of zinc monocrystals
by the method of zonal crystallisation. (Cont.)

speeds of movement of the furnace monocrystals of arbitrary
orientations were obtained and this is attributed to the
fact that the speeds of growth of all the faces of the
crystal are larger than the speed of movement of the furnace.
In growing monocrystals by the method of zonal crystallisa-
tion it is necessary to take into account the opposing
effects of the grain growth and of selective recrystallisa-
tion. At relatively high speeds of displacement of the
furnace along the polycrystalline wire the process of grain
growth is of decisive influence, since the selective
crystallisation cannot be completed in this case owing to
various kinetic reasons. At low speeds of movement of the
furnace the process of selective recrystallisation is the
more important one. The role of admixtures absorbed on the
growing faces of the monocrystal consists of reducing their
speed of growth; during the growth of the monocrystals a
displacement of the admixtures takes place in the direction
of the movement of the boundary melt-metal and thereby
occurrence of a non-uniform distribution of the admixtures
along the wire axis is possible which is unfavourable from
the point of view of mechanical tests.

Card 2/3

126-3-20/34

There are 3 figures, and 4 references, 3 of which are Slavic.

SUBMITTED: July 12, 1956.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov.
    (Moskovskiy Gosudarstvennyy Universitet imeni M.V.Lomonosova)
    Institute of Physical Chemistry, Ac.Sc. U.S.S.R.
    (Institut Fizicheskoy Khimii AN SSSR).

AVAILABLE: Library of Congress

Card 3/3

Rozhanskiy, V.N.   G-4

USSR/Electricity - Conductors

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1407

Author   : Rozhanskiy, V.N., Goryunov, Yu.V., Dekartova, N.V.

Inst   : Moscow State University.

Title   : Certain Features of the Influence of a Surface-Active
             Medium on the Deformation, and the Associated Change in
             the Electric Resistivity of Metallic Single Crystals.

Orig Pub : Zh. fiz. khimii, 1957, 31, No 4, 882-886

Abstract : A study was made of the dependence of the value of the
             adsorption effect on the orientation of the slippage
             plane with respect to the axis of a zinc single crystal.
             To separate the influence of the orientation of the sin-
             gle crystal on the yield point from the indirect depen-
             dence of the magnitude of effect on the orientation, the
             loading mode was varied. In order to clarify the

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ROZHANSKIY, V N

20-5-44/67

AUTHOR FEYGIN L.A.,ROZHANSKIY V.N.

TITLE On the Complete X-Ray Investigation of the Dispersion of Graphite
Powders and Colloid Preparations.
(O vozmozhnosti polnogo rentgenograficheskogo dispersionnogo anli-
za grafitovykh poroshkov i kolloidnykh preparatov -Russian)

PERIODICAL Doklady Akademii Nauk SSSR,1957,Vol 113,Nr 5,pp 11o2-11o5(U.S.S.R.)
Received 7/1957   Reviewed 8/1957

ABSTRACT The radiographic methods of measuring dispersion states of solids
have been developed in the course of the past 3o years. In this
connection only the average sizes of the monocrystal grain was u-
sually taken into account, and the so-called "breadth" of the dif-
fraction line was taken as a basis.In recent years the possibility
of finding the distribution function of the crystallite size by the
examination of the shape of the diffraction line of the X-Ray pic-
ture of the powder was proved. This method is based upon the harmo-
nic analysis of the intensity of diffraction reflection and makes
it possible to estimate the amount of stress and the measurements
of the grain separately for crystals of any symmetry. If microstres-
ses are lacking, the intensity I ( ) of the reflection hkl can be
represented as the Fourier integral:

$$I ( ) = h (n) e^{2\pi i n} ( ) dn,$$ where n is the parameter which is li-
nearly connected with the size of the grain;   -the diffraction ang-
le, and   -a variable in the negative space. By the relation of the

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On the Complete X-Rays Investigation of the Dispersion
of Graphits Powders and Colloid Preparations.   20-5-44/67

function h (n) with the grain distribution curve $g(M)$ the authors,
by differentiation of the equation (2),obtain the expression

$$\frac{dh}{dn} = K \int_n g(M)dM; \quad \frac{d^2h}{d^2n} = Kg(n),$$ i.e. the first derivative dh/dn, re-
sults in an integral n function, whilst the second d^2h/d^2n - de-
notes the differential function of the distribution.Thus, a detail-
ed description of the dispersional composition of the sample is ob-
tained. The investigation of various reflections makes it possible
to study also the shape of various crystallites. However, the prac-
tical application of this method meets with considerable difficul-
ties. It may be assumed that in the case of brittle substances the-
re is no washing out of lines as a result of microstresses,which
fact facilitates the investigation of the composition of dispersion
considerably.The authors endeavored to find the dispersion func-
tion according to the size of particles in highly dispersed graph-
ite systems; this problem attained actual importance in connection
with the introduction of new kinds of colloidal graphite prepara-
tions in practice, which are produces by mechanical dispersion in
a vibration mill. By means of a special process particles of great-
ly differing sizes were obtained. After 3o hours graphite becomes
soot-like and is heated in air up to 700°.The determination of the
true shape of the line was carried out according to Stokes'method.

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On the Complete X-Ray Investigation of the Dispersion
of Graphite Powders and Colloid Preparations.   20-5-44/67

The dependence curves of the Fourier coefficients of parameter n
were found to be approximated to the theoretical curves in the ca-
se of lacking stresses. In order to find the integral function it
is sufficient to differentiate the experimentally found function
$h(n)$ although the accuracy attained cannot be very high.From the ex-
perimental curve $h(x)$,and x and x^2 are easily found (average size
and average square of size). From the relations mentioned the me-
dians and the dispersion σ are then determined. The curves $h(n)$
computed according to these parameters coincided satisfactorily
with experimental results. This may be taken to be a confirmation
of the possibility of applying the logarithmically normal law for
the description of the distribution according to size of the gra-
phite particles. The determination of the specific surface accor-
ding to nitrogen absorption at low temperatures according to
Brunnarer, Emmet, and Teller agrees satisfactorily with radiogra-
phic results.This is apparently a sign that in the samples of the
authors the domains of coherent dispersion coincide with the gra-
phite particles, the sizes of which are determined according to
the adsorption of nitrogen vapors.
(With 3 illustrations, 3 Slavic references).

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On the Complete x-Ray Investigation of the Dispersion — —
of Graphite Powders and Colloid Preparations.   20-5-44/67

ASSOCIATION   All Union Central Scientific Research Institute for New Problems
               connected with the Production of Building Material by fine Crushing.
PRESENTED BY
SUBMITTED   17.1o.1956
AVAILABLE   Library of Congress
Card 4/4

Rozhanskiy, V. N.

20-5-26/54

AUTHORS: Feygin, L.A., and Rozhanskiy, V. N.

TITLE: The Influence of Adsorption Layers on the Dispersion of Graphite
                (O vliyanii adsorbtsionnykh sloyev na dispergirovaniye grafita)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5, pp. 946-948
                (USSR)

ABSTRACT: The problems of the physical-chemical influence exercised upon
                the processes mentioned in the title have as yet been quite
                insufficiently investigated. They are mainly connected with the
                difficulties of dispersion analysis within the domain of the
                colloidal size of the particles. In the present work the authors
                measured the specific surface by the method of low temperature
                nitrogen adsorption, and further, they employed the radiogra-
                phical method previously used by them as well as investigation
                under the electron microscope. The vibration crushing of graph-
                ite makes it possible to produce highly dispersive preparations
                of colloidal graphite. The average size of the primary partic-
                les is 100 $\overset{o}{A}$ and less. The specific surface here attains 600
                m^2/g. This method of crushing is 10 - 20 times more intense
                than in an aqueous medium. Such a high state of dispersion

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The Influence of Adsorption Layers on the Dispersion of Graphite

20-5-26/54

should naturally be brought into connection with the strata-like structure of the graphite lattice. The radiographical and electron-microscopical investigations confirm this, for the graphite particles turn out to be little scales the sizes of the base of which considerably exceeds their heighth. In order to be able to explain the dispersion mechanism in graphite small quantities of water as well as of other substances were introduced during the grinding process. It was found that in a vibration mill a rather low average pressure is produced because the dispersion process on the whole develops at the cost of surface crushing of the particles on the occasion of their relative displacement. The frictional force between the particles therefore in a high degree determines the degree of crushing. Figure 2 shows the curves of the dependence of the increase of the specific graphite surface on the time needed for crushing in the case of different additions of water. Herefrom it is seen that the dispersion of dry graphite is the most intense: the specific suface increases with a constant velocity of 30 m^2/g min. up to a value of 300 m^2/g. On the other hand, the increase of the specific surface increases about ten times more slowly in the case of additions of water of the order of 3 %.

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The Influence of Adsorption Layers on the Dispersion of Graphite

Knowledge of the true value of the specific surface made it possible to calculate the number of saturated monolayers of water which are formed on the surface of the graphite particles if the powder is dispersed with a certain quantity of water. The change of the velocity of the increase of the graphite surface takes place with a content of water that corresponds to the formation of a saturated monolayer. This circumstance is due to the abrupt increase of the friction coefficient of the pure newly formed graphite particle in comparison to the friction of the graphite surfaces covered with adsorption water. The kinetics of dispersion is explained in the following manner: Even the smallest additions of water warrant a sufficient num- ber of layers of adsorbed liquid. With an increasing surface the number of water layer diminishes, until, finally, the number becomes less than what is necessary for the formations of a monolayer. Grinding velocity then becomes nearly equal to that of "dry" crushing. It may be seen from the experiments that the small quantities of water or of other substances al- ways found on the exterior layer of the initial graphite sample are able to influence the dispersion process only during its

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The Influence of Adsorption Layers on the Dispersion of Graphite

initial stages because, during vibration crushing, the specific
surface is increased a hundred- and even a thousand times.
Admixtures in graphite will therefore have only a low surface
density on the course of the crushing process. This was checked
and proved. Figure 3 shows the kinetics of crushing in the
case of additions of small quantities of butyl alcohol, the
curves of which take the same course as in the case of water.
The same is confirmed qualitatively on the occasion of the
introduction of benzene vapor. Further, water was added in the
case of natural graphite, artificial graphite made of anthra-
cite, and on the occasion of the crushing of mica. In the
case of mica additions of water increase the velocity of
crushing. There are 3 figures, 1 table, and 8 Slavic refrences.

Card 4/5

20-5-26/54

The Influence of Adsorption Layers on the Dispersion of Graphite

ASSOCIATION: All-Union Institute for New Problems Connected with the Pro-
              duction of Building Material
              (Vsesoyuznyy institut novykh problem proizvodstva stroitel'nykh
              materialov)
              Chair for Colloidal Chemistry at the State University of Moscow
              (i Kafedra kolloidnoy khimii Moskovskogo gosudarstvennogo uni-
              versiteta)

PRESENTED: by P.A. Rebinder, Academician, March 14, 1957

SUBMITTED: March 2, 1957

AVAILABLE: Library of Congress

Card 5/5

Rozhanskiy, V. N.

20-6-13/48

AUTHORS: Shchukin, Ye.D., Rozhanskiy, V.N., Goryunov, Yu.V.

TITLE: On the Modification of the Rheostat During the Occurrence of an Elementary Displacement (Ob izmenenii elektricheskogo soprotivleniya pri elementarnom sdvigoobrazovanii)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1101 - 1103 (USSR)

ABSTRACT: The investigations of the "elementary" displacements of about 500 - 2000 $\mathring{A}$ are the most interesting ones, which occur in a gliding zone. For this purpose the ability of the channel to record deformations was raised to 50 $\mathring{A}$. The experiments were carried out with cadmium monocrystals of a diameter of 0,75 mm and with zinc monocrystals of 0,5 mm of diameter. These crystals were 15 - 20 mm long and the angle between the hexagonal axis and the direction of extension was 30°. The extension experiments were carried out at room temperature and led to an extension of 3 - 5 %. In connection with slight and slow deformations like these the total increase of the resistance was not remarkably higher than the geometrically conditioned increase. The results of the accurate measurings of the oscillographically registered cracks from δl = 350 $\mathring{A}$ upwards in the case of

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20-6-13/48

On the Modification of the Rheostat During the Occurrence of an Elementary
Displacement

cadmium and zinc monocrystals are shown in a diagram. These
data give evidence of the follwoing fact: The streak of the
effective values of $q = \delta R/\delta l$, $1.2r_0$ — has an S-shaped form with
the flexion in the area $\delta l \sim 500$ to 1000 Å and with a total
decrease up to 30 % as compared with the geometrically condi-
tioned values with $\delta l > 1000$ Å. This corresponds to a dis-
placement by about 500 interatomic distances in the direction
of the gliding (here R denotes the rheostat, l - the exten-
sion and r_0 denotes the resistance of the unit of length of the
not deformed sample.)A re-establishment of the order and a de-
crease of the defects of the structure within the area of the
gliding corresponds to the large cracks which exceed a certain
critical amount. It is especially referred to the paired cracks.
Finally the authors give an explanation for the development of
the phenomena here described. Despite the short duration of the
cracks the importance of the vacancies in connection with the
increasing resistance of the hardened metal and its relation
to the dislocation mechanism of the deformation has to be con-
sidered. There are 2 figures and 6 references, 2 of which are
Slavic.

Card 2/3

20-6-13/48

On the Modification of the Rheostat During the Occurrence of an Elementary Displacement

ASSOCIATION: Department for Dispersive Systems of the Institute for Physical Chemistry, AN USSR. Chair for Colloid Chemistry of the Moscow State i University imeni M.V. Lomonosov (Otdel dispersnykh sistem Instituta fizicheskoy khimii Akademii nauk SSSR. Kafedra kollodnoy khimii Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova)

PRESENTED: April 12, 1957, by P.A. Rebinder, Academician

SUBMITTED: April 3, 1957

AVAILABLE: Library of Congress

Card 3/3

ROZHANSKIY, V.N.

20-5-14/48

AUTHORS: Rozhanskiy, V. N., Pertsov, N.V.,
              Shchukin, Ye. D., Rebinder, P. A., Academician

TITLE: Effect of Thin Mercury Coatings on the Strength of
              Metallic Monocrystals (Vliyaniye tonkikh rtutnykh pokrytiy
              na prochnost' metallicheskikh monokristallov).

ABSTRACT: At first the authors shortly report on respective literature.
              In the present works the monocrystals of zinc, tin, cadmium
              and lead (degree of purity 99.99 %, diameter 0.5 mm,
              length about 10 mm) were investigated. As surface-active
              substance served mercury which was applied in form of a
              thin coating by means of immerging the sample into an
              $Hg_2(NO_3)_2$-solution. The mercury covered the monocrystal
              with an equal film of about 0.1 µ thickness and was rapidly
              saturated with the metal to be investigated. The investi-
              gation of the strength properties of the amalgamated mono-
              crystals in their expansion with constant velocity showed
              that the strength of the zinc- and tin- monocrystals
              covered with mercury was a few times less than the strength
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Effect of Thin Mercury Coatings on the Strength of   20-5-14/48

Metallic Monocrystals.

of the non-amalgamated monocrystals. Such an abrupt decrease
of strength is obviously connected with the important
decrease of surface tension at the metal/mercury boundary
as well as with the decrease of the production operation
of a new surface at the crack. The investigation of axial
ground sections of amalgamated zinc-monocrystals according
to their deformation showed the following: The cracks can
develop on the surface as well as in the interior of the
monocrystal, which can be seen in observing the axial ground
sections. The development of the cracks in the inner part
can be connected with a noticeable diffusion of mercury
into zinc (at room temperature) with subsequent decrease of
the surface tension on the developing inner separation
surfaces. The rise of temperature up to 160° C annihilates
the above-mentioned phenomena of catastrophic brittleness
with the zinc-monocrystals investigated and reconstitutes
completely the plasticity and the strength. Also the
decrease of the deformation velocity causes phenomena
which are similar to those developing with the rise of
temperature. The strength of the body decreases with the

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Effect of Thin Mercury Coatings on the Strength   20-5-14/48
of Metallic Monocrystals.

decrease of the surface tension on the just produced crack
surface, but it increases with the creation of conditions
which prevent the accumulation of great dislocation
avalanches near the possible potential barriers. There are
4 figures, and 11 references, 6 of which are Slavic.

ASSOCIATION: Chair for Colloidal Chemistry of the Moscow State University
imeni M. V. Lomonosov (Kafedra kolloidnoy khimii Moskovskogo
gosudarstvennogo universiteta im. M. V. Lomonosova).

SUBMITTED: July 10, 1957.

AVAILABLE: Library of Congress

Card 3/3

ROZHANSKIY, V. N., GORUNOV, G. V., SHCHUKIN, Ye. D., and PERISOV, N. V.

"Unhomogeneous Plastical Deformation and the Effect of Surface-Active Mediums on the Mechanical Properties of Crystals."

paper presented at the Conf. on Mechanical Properties of Non-metallic Solids, Leningrad, USSR, 19-26 May 58.

Moscow State Univ., Inst. of Physical Chem. Acad. Sci. USSR, Moscow.

KOZHANSKII, V. N. IU. V. GORIUNOV, Ie. D. SHCHUKIN, N. V. PERTSOV

"The Emersion of Dislocations on the Crystal Surface as Well as the Development of Fissures."

report presented at the Conference on Investigation of Mechanical Properties of Non-Metals, by the Intl. Society of Pure and Applied Physics and the AS USSR, at Leningrad, 19-24 May 1958.
(Vest, Ak Nauk SSSR, 1958, no. 9, pp. 109-111)

SOV/120-58-6-24/32

AUTHORS: Dekartova, N. V., Rozhanskiy, V. N. and Shchukin, Ye. D,

TITLE: Recording of the Damping of the Oscillations of a Torsional Pendulum of a Loop Oscillograph in the Measurement of Internal Friction (Zapis' zatukhaniya kolebaniy krutil'nogo mayatnika na shleyfovom ostsillografe pri izmerenii vnutrennego treniya)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 107-109 (USSR)

ABSTRACT: The internal friction of metals is often measured by the damping of oscillations of a torsional pendulum (Refs.1 to 4). The amplitude of these oscillations is usually measured with a lamp and scale arrangement. To record torsional oscillations, the present authors have used a special attachment which will record the oscillations within the range 0.1 - 10 c/s with an accuracy of about 3". The pendulum is illustrated in Fig.1, in which 1 is a quartz tube, 2 is a furnace, 3 is the specimen, 4 is a vacuum chamber for the pendulum, 5 is a mirror, 6 is a damper of transverse

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SOV/120-58-6-24/32

Recording of the Damping of the Oscillations of a Torsional Pendulum
of a Loop Oscillograph in the Measurement of Internal Friction

vibrations, 7 are loads, 8 is an aluminium rod, 9 is a
window and 10 is a connection to the pump. When the mirror
is at rest, the spot of light reflected off it is roughly in
the middle of a photo-element which faces it. As the pendu-
lum is set in motion, the spot will move across the photo-
element and an alternating signal will appear across the
load of the photo-element. This is then amplified and then
recorded on a loop oscillograph. The circuit is shown in
Figs.2 and 3 and an actual record of a typical oscillation is
shown in Fig.4. There are 4 figures, no tables and 7 referen-
ces, of which 3 are English and the rest Soviet.

ASSOCIATION: Khimicheskiy fakul'tet MGU (Chemistry Department of
Moscow State University)

SUBMITTED: December 24, 1957.

Card 2/2

SOV/53-65-3-2/11

AUTHOR: Rozhanskiy, V. N.

TITLE: Irregularities of the Plastic Deformation of Crystals
              (Neravnomernosti plasticheskoy deformatsii kristallov)

PERIODICAL: Uspekhi fizicheskikh nauk, 1958, Vol. 65, Nr 3, pp. 387-406 (USSR)

ABSTRACT: By means of extensive published material the author gives a
              survey of problems and phenomena of crystal deformation, taking
              special account of the domains near fluidity. First, the phenom-
              enon of plastic deformation is discussed in general; next, the
              staggered deformation is dealt with and discontinuities in
              zinc-monocrystals are discussed on the basis of oscillograms.
              Figure 5 shows the dependence of electric resistance on deforma-
              tion (in the case of the continuous deformation of a straight).
              A further chapter deals with the connection between deformation
              and electric conductivity. The author further deals with the
              forming of microfissures in the nuclei of monocrystals. Finally,
              the mechanical properties of plastically deformed monocrystals
              are discussed. There are 14 figures and 146 references, 79 of
              which are Soviet.

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Irregularities of the Plastic Deformation of Crystals   SOV/53-65-3-2/11

1. Crystals--Plasticity   2. Crystals--Deformation   3. Crystals--Electrical
properties   4. Crystals--Mechanical properties

Card 2/2

Kozhansky, V. N.

AUTHORS: Shchukin, Ye. D. , Goryunov, Yu. V. , Pertsov, N. V. ,
             Rozhanskiy, V. N.

TITLE: On the Nature of the Unhomogeneous Plastic Deformation of
             Metal Mono-Crystals (O prirode neravnomernosti plasticheskoy
             deformatsii metallicheskikh monokristallov)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 277 - 279 (USSR)

ABSTRACT: In a previous work the following was shown: The jumps of
             deformation of 0,5 to 20 μ which usually can be observed in
             the case of expansion of a zinc-crystal, have a very compli-
             cated structure and are the sum of a series of elementary
             jumps, which form in the various cross sections of the cry-
             stal. The investigation of the elementary shifts made it ne-
             cessary to diminish the inertia of the apparatus considerably
             and to increase its sensitivity to 50 $\overset{\circ}{A}$. The mono-crystals
             with the diameter of 0,4 to 0,8 mm, which were of very pure
             (99,99 %) zinc, cadmium, tin, lead and aluminum, were stretch-
             ed during constant stress and at room temperature, whereby
Card 1/3   the stress was a bit higher than the stretching-strain limit.

20-2-19/60

On the Nature of the Unhomogeneous Plastic Deformation of Metal Mono-Crystals

In all the cases of the test-pieces (save aluminum) together with the deformation also the change of the electric resistance of the test-piece was registered. In the case of stretching zinc, cadmium and tin many small jumps of 150 to 200 $\mathring{A}$ on to 2 000 $\mathring{A}$ with a duration of 1 - 3 to 30 microseconds were registered. Jumps until 10 000 - 15 000 $\mathring{A}$ were found rather seldom, and if they were found, they were usually of several small jumps. Also considerably less expressed jumps of 1 000 to 5 000 $\mathring{A}$ were observed. By careful microscopic examination of the deformed crystals was found out that those jumps of deformation result on shearing and not on twin-formation. The number of jumps, which can be observed, increases with the decrease of their size (at least on to 250 - 300 $\mathring{A}$). Obviously there is no minimum size of the jumps, but a superior limit of the elementary shift. In the case of mono-crystals of aluminum and of lead a clearly marked formation of jumps was not observed. The results which were found out here prove the results on large jumps. The discontinuity of the flow and the quick jumps are to be regarded as a common feature which is produced by the nature of dislocation of the plastic deformation. There are 4 figures, and 6 references, 3 of which are

Card 2/3

20-2-19/60

On the Nature of the Unhomogeneous Plastic Deformation of Metal Mono-Crystals

Slavic.

ASSOCIATION: Department for Dispersive Systems of the Institute for Physi-
cal Chemistry AN USSR (Otdel dispersnykh sistem Instituta fi-
zicheskoy khimii Akademii nauk SSSR)
Colloidal Chemistry Chair of the State University imeni M. V.
Lomonosov, Moscow (Kafedra kolloidnoy khimii Moskovskogo go-
sudarstvennogo universiteta im. M. V. Lomonosova)

PRESENTED: April 12, 1957, by P. A. Rebinder, Academician

SUBMITTED: April 3, 1957

AVAILABLE: Library of Congress

Card 3/3

SOV/2o-121-2-22/53

AUTHORS: Rozhanskiy, V. N., Dekartova, N. V.

TITLE: Some Regularities in the Damping of Torsion Oscillations of Metal Wires (O zakonomernostyakh zatukhaniya krutil'nykh kolebaniy metallicheskikh provolok)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 2, pp. 274 - 276 (USSR)

ABSTRACT: For a damped torsion oscillation in the limiting case at $\varphi_\alpha \to 0$ the linear equation $\ddot{\varphi} + A\dot{\varphi} + B\varphi = 0$ is valid. The logarithmic decrement δ and the period T are constant. For the degree of the energy dissipation (for weak damping) there holds $\Delta U/T = C\varphi_a^2$. With finite amplitudes δ in practice is naturally not constant, but decreases with time t. The authors carried out investigations with mono- and polycrystalline zinc wires and polycrystalline copper wires. ($2r = 0,5$ to 1 mm, $\ell = 20$ to 300 mm, frequency $0,5$ to 8 cycles). For monocrystalline Zn $\varphi_0/\ell < 2.10^{-5}$ cm^{-1} holds, for polycrystalline Zn $\varphi_0/\ell < 1,5.10^{-4}$ cm^{-1} and for polycrystalline Cu $\varphi_0/\ell < 2.10^{-4}$ cm^{-1}.

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Some Regularities in the Damping of Torsion
Oscillations of Metal Wires   SOV/20-121-2-22/53

For the dependence of the amplitude on time there is valid
$-d\varphi/dt = \varepsilon\varphi_a + b\varphi_a^2$; the integration of this equation gives
$\varphi_a(t) = \varphi_0(1-k)/(e^{at}-k)$, (where a and k are constants);
$\varphi(t) = [\varphi_0(1-k)/(e^{at}-k)] \cos \omega t$, so in the differential equation
$\ddot{\varphi} + \dot{\varphi}\psi(t) + \varphi\lambda(t) = 0$ $\psi(t) = 2a/(1-ke^{-at})$ and $\lambda(t) = \omega^2 + a^2/(1-ke^{-at})$ are determined. The values obtained for φ/ℓ(in poise) and η (in poise) are given in a table for a) constant δ, b) non-constant δ and c) for monotonous torsion. For a) the η-values are approximately 10^8-10^9, for b) about 10^9 and for c) about 10^{16} to 10^{17}. There are 2 figures, 1 table, and 9 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova
              (Moscow State University imeni M.V.Lomonosov)

Card 2/3

SOV/2o-123-4-2o/53

24(2)
AUTHOR: Rozhanskiy, V. N.

TITLE: On the Mechanism of the Development of Microcracks in
               Crystals   on   Plastic Deformation   (O mekhanizme
               razvitiya zarodyshevykh treshchin v kristallakh pri ikh
               plasticheskom deformirovanii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 4, pp 648-651
               (USSR)

ABSTRACT: In the case of   plastic deformation in solids a large
               number of "embryonic" micro-cracks develop and open, which may
               mark the beginning of the occurrence of fracture cracks. First,
               a number of mechanisms already previously suggested are dis-
               cussed. The most probable, however, is another mechanism of
               crack development   in the slip-plane, which plays a particular-
               ly important part whenever the slip-plane and the plane of
               cleavability coincide. If dislocations located on the edge
               accumulate, the curvature of these planes is of essential
               importance and may lead to the formation of a free surface
               in the slip-plane. This leads to the production of a cavity
               which has a large Byngers vector. Such a cavity may also be
               the beginning of the development of a fracture crack caused

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SOV/2o-123-4-2o/53

On the Mechanism of the Development of Microcracks in Crystals on   Plastic Deformation

by the concentration of stresses (tensions) in this cavity. Besides, this cavity may grow in size by fusion with individual dislocations. This effect is particularly clearly marked in the case of amalgamated zinc single crystals. A formula is derived for maximum normal stresses occurring at the ends of the crack. The experimental results obtained in the present paper agree satisfactorily with theoretical calculations. The author thanks V. L. Indenbom for his useful advice given while discussing the present paper. There are 4 figures, 1 table, and 18 references, 10 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: July 14, 1958, by P. A. Rebinder, Academician

SUBMITTED: July 10, 1958

Card 2/2

BEREZHKOVA, G.V.; ROZHANSKIY, V.N.

Polysynthetic twins in corundum whiskers. Fiz. tver. tela 6 no.9:
2745-2749 S '64.   (MIRA 17:11)

1. Institut kristallografii AN SSSR, Moskva.

ROZHANSKIY, V.N.; PREDVODITELEV, A.A.

Role of the diffusion of point defects along dislocations in
plastic deformation. Dokl. AN SSSR 158 no.4:835-838 0 '64.

(MIRA 17:11)

1. Institut kristallografii AN SSSR i Moskovskiy gosudarstvennyy
universitet. Predstavleno akademikom G.V. Kurdyumovym.

-/8.9200

66416

SOV/20-128-6-20/63

AUTHOR: Rozhanskiy, V. N.

TITLE: On the Phase Separation of Surface-active Impurities at Crystal
               Structure Imperfection Sites in Metals

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1171-1173
               (USSR)

ABSTRACT: The stability of monocrystalline and polycrystalline metals
               decreases considerably if they are covered with a thin layer of
               a molten surface-active metal. This phenomenon is a special case
               of decrease in stability due to adsorption, as detected and
               thoroughly investigated by P. A. Rebinder. Although the con-
               centration of impurities in the defective zone may increase, the
               current of surface-active atoms will not stop in the distorted
               zone. This is due to rising diffusion which, according to
               S. T. Konobeyevskiy, may develop in the direction of the con-
               centration increase of the diffusing elements. The author in-
               vestigated the local separation of the surface-active impurities
               mercury, gallium, bismuth, tin, which considerably decrease the
               stability of zinc when applied onto the surface as a thin liquid
               film. N. V. Dekartova and the author recently showed that such
               surface-active impurities cause the relaxation of stresses at

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SOV/20-128-6-20/63

On the Phase Separation of Surface-active Impurities at Crystal Structure
Imperfection Sites in Metals

the grain boundaries to be increased strongly. When mercury
($\sim 1\%$) is added to zinc, the impurity separates in the form of
small phase domains (size $\sim 10^{-4}$ cm) which are stretched out
along the base. This separation occurs mainly on dislocations,
on block- and grain boundaries. When adding gallium to zinc at
room temperature, a disperse phase separates in the form of
foil-shaped small hexagonal crystals. Likewise, in the case of a
small impurity of bismuth in zinc a disperse phase separates in
such foil shape, without, however, any regular boundary. A
selective separation of surface-active impurities at imperfec-
tion sites was observed by the author on some other metals as
well. It is therefore considered to be a rather common property.
When the impurities solved in the metal gather around the dis-
location, the near field of stresses is caused to withdraw. No
conclusions as to the composition and structure of the new
phase can be as yet drawn on the basis of data available. The
observed selective separation of surface-active metal impurities
at the imperfection sites of crystal structure may give rise to

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On the Phase Separation of Surface-active Impurities at Crystal Structure
Imperfection Sites in Metals

the formation of a high content of surface-active atoms on such
sites where stresses are concentrated. This then causes the
surface stress on the free surface to diminish. The author
thanks P. A. Rebinder and V. L. Indenbom for critical remarks.
The recently published papers by Yu. V. Goryunov, N. V. Pertsov,
Ye. D. Shchukin, and P. A. Rebinder contain data concerning the
surface activity of gallium on cadmium and tin. There are
2 figures and 16 references, 13 of which are Soviet.

ASSOCIATION: Kafedra kolloidnoy khimii Moskovskogo gosudarstvennogo
universiteta im. M. V. Lomonosova (Chair of Colloidal Chemistry
of the Moscow State University imeni M. V. Lomonosov)

PRESENTED: June 19, 1959, by P. A. Rebinder, Academician

SUBMITTED: June 17, 1959

Card 3/3

S/020/60/133/04/14/031
B019/B060

AUTHORS: Rozhanskiy, V. N., Stepanova, V. M.

TITLE: Sudden Shift of Dislocations in NaCl Crystals

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 4,
               pp. 804-806

TEXT: By way of introduction the authors indicate the prerequisites for
the applicability of the selective etching for the observation of the
motion of dislocations in ion crystals. Thus the etching figures must cor-
respond to the dislocations on the surface, and they must be well developed
to allow an unequivocal identification. Etching must be carried out slowly
enough to allow the application of the method of selective etching. A good
etching agent is said to be a mixture of glacial acetic acid (density 1.045)
and methyl alcohol (density 0.800) in a ratio of 2:1. S. T. Koretskaya
helped in obtaining this composition of the etching agent. Next, the
authors discuss in great detail the method of selective etching developed
by Gilman and Johnston (Refs 1, 2, 3) and offer the examples illustrated
in Figs. 1 and 2. The sudden shift of dislocations under the action of

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Sudden Shift of Dislocations in NaCl Crystals   S/020/60/133/04/14/031
                                                   B019/B060

ccnstant tangential stresses, which is revealed by the position and the
magnitude of the etching figures, is specially pointed out. There are
2 figures and 6 references: 1 Soviet and 5 US.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
               (Moscow State University imeni M. V. Lomonosov).
               Institut kristallografii Akademii nauk SSSR
               (Institute of Crystallography of the Academy of Sciences,
               USSR)

PRESENTED: March 3, 1960, by A. V. Shubnikov, Academician

SUBMITTED: February 29, 1960

Card 2/2

81619
S/181/60/002/06/07/050
B122/B063

24.7500

AUTHOR: Rozhanskiy, V. N.

TITLE: The Problem of the Origin and Development of Fractures in Crystals

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1082 - 1087

TEXT: By way of introduction, the author briefly discusses various theories of the origin of crystal fractures by P. A. Rebinder (Ref. 2), Ya. I. Frenkel' (Ref. 5), Konobeyevskiy, A. N. Yel'nikov (Ref. 19), and A. V. Stepanov (Ref. 20). The present paper describes investigations of threadlike single crystals of zinc and zinc foils coated with a surface-active Hg layer. These investigations were intended to clarify the origin of fractures in the most important cases (presence of highly surface-active impurities). The formation of fractures due to an accumulation of dislocations is excluded in the case of threadlike crystals due to the small size and the great perfection of such crystals. The crystals were bred, and their strength was tested as dependent on their diameter, storage time, and Hg coating (Figs. 2 and 3). The slope of the slip plane toward the load

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The Problem of the Origin and Development   S/181/60/002/06/07/050
of Fractures in Crystals   B122/B063

direction amounted to ~45°. Thin amalgamated zinc crystals (10 - 30 μ)
formed a neck in the fracture process, while zinc crystals with d~100 μ
had a brittle fracture (Fig. 4). Thus, by the surface-active coating, an
accumulation of dislocations was found to be possible, leading to the
plastic fracture of crystals. Initial fractures and cracks were observed
on foils as well. The majority of cracks developed in the slip planes in
front of obstacles such as block and grain boundaries. The cracks of par-
allel slip planes met and caused the grains to break. Shear stresses arose
on the formation of such cracks, and, despite an increase in the stress
applied, the cracks did not grow further, but new cracks arose in parallel
slip planes. Through the observation of the crack formation the author
reached the conclusion that initial cracks were not absolutely necessary
for the definite sample fracturing, and that with certain preparation pro-
cesses the formation of cracks of a critical size occurred spontaneously.
In zinc crystals with surface-active coating such spontaneous cracks do oc-
cur and, more precisely, this is assumed to occur due to a saturation of
the latent rupture plane with the surface-active impurities accumulated
there by plastic deformation. The following picture is derived from obser-
vations for the fracture mechanism: In the presence of strongly surface-

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The Problem of the Origin and Development
of Fractures in Crystals

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S/181/60/002/06/07/050
B122/B063

active impurities the cracks arise and develop in the parallel slip planes,
especially on sites of dislocation accumulations in front of obstacles.
When the cracks of the parallel slip planes meet, a cleavage plane, not
present before, develops in the crystal. This mechanism can also be assumed
for crystals with natural cleavage and slip planes. Stroh (Ref. 17), Ye. D.
Shchukin and V. I. Likhtman (Ref. 27) made the theoretical calculation of
the normal and tangential stresses arising with this mechanism. The formu-
la can be used as a criterion for the mechanism assumed. There are 7 fi-
gures and 30 references: 17 Soviet, 2 German, 2 Japanese, 1 French,
1 American.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University im. M. V. Lomonosov)

SUBMITTED: August 6, 1959

Card 3/3

ROZHANSKIY, V.N.; PARVOVA, Ye.V.; STEPANOVA, V.M.; PREDVODITELEV, A.A.

Kinetics of selective etching and polsihing of NaCl crystals.
Kristallografiia 6 no.5:704-713 S-O '61.   (MIRA 14:10)

1. Institut kristallografii AN SSSR i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova.
                (Salt)   (Crystallography)

20636

24.7500   1136, 1143, 1137, 1160

S/020/61/136/006/012/024
B104/B204

AUTHORS: Rozhanskiy, V. N. and Indenbom, V. L.

TITLE: Accumulations of dislocations in crystals containing
impurities

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 6, 1961, 1331-1334

TEXT: Theoretical calculations concerning the strengthening and destruction
of crystal bodies have hitherto always been made on the assumption that
the dislocations are always able to move freely along the slip planes.
However, it was found in the course of experimental investigations that
the distribution of dislocations does not agree with theoretical
assumptions. The authors presume that this is caused by the fact that
in previous papers, the effect produced by impurities and defects, which
may increase the resistance to a displacement of dislocations, is taken
into account. On the other hand, the conceptions concerning the formation
of large accumulations of freely moving dislocations forming the basis
of some theories on the destruction of crystals, have recently been the

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2D 636

Accumulations of dislocations in ...

S/020/61/136/006/012/024
B104/B204

cause of considerable doubts, as the existence of strong barriers, which might resist large groups of freely moving dislocations, is very improbable. The authors suggest another scheme for the accumulation of dislocations, in which blocked impurities are the cause of the formation of accumulations (Fig. 1). If two dislocations are arranged at a distance of l_1 from each other, and if the second dislocation produces a tangential stress τ at the place of the first, then the second dislocation can be determined from the equilibrium condition for the external forces and the interaction forces of the dislocations. With a small neglection, the relation $l_1 = Gb/2\pi k\tau$ (1) holds. In consideration of a third dislocation, the following holds: $\tau = \dfrac{G}{2\pi k}\left(\dfrac{1}{l_1+l_2} + \dfrac{1}{l_2}\right)$,

from which it follows that $\dfrac{1}{l_1} = \dfrac{1}{l_1+l_2} + \dfrac{1}{l_2}$. By the substitution

$l_1 = a_i l_1$, the last relation assumes the form $1 = \dfrac{1}{a_1+a_2} + \dfrac{1}{a_2}$, and in the further course, the system

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Accumulations of dislocations in ...

S/020/61/136/006/012/024
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$$l = \frac{1}{a_1},$$

$$l = \frac{1}{a_1 + a_2} + \frac{1}{a_2},$$

(4)

$$l = \frac{1}{a_1 + a_2 + a_3} + \frac{1}{a_2 + a_3} + \frac{1}{a_3},$$

. . . .

$$l = \frac{1}{a_1 + \ldots + a_n} + \frac{1}{a_2 + \ldots + a_n} + \ldots + \frac{1}{a_n}.$$

is constructed, and it is shown that for great values of n the relation

$$a_n \approx \gamma + \ln n + \frac{\pi^2/6 - 1}{\gamma + \ln n}$$ (5) holds. Herefrom the following expression

follows for the length of the accumulation:

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Accumulations of dislocations in ...

$$L_{n+1} = l_1 \sum_{m=1}^{n} a_m \approx \int_1^n dm \left(\gamma + \ln m + \frac{\pi^2/6 - 1}{\gamma + \ln m} \right) = .$$

$$= l_1 \{ n \ln n + (n-1)(\gamma-1) + (\pi^2/6 - 1) e^{-\gamma} [Ei(\gamma + \ln n) - Ei(\gamma)] \}, \qquad (6)$$

In Fig. 2, the results calculated from (5) and (6) are compared with those calculated from (4), wherefrom the applicability of the approximations (5) and (6) may be seen. It is then noted that the model suggested here is in agreement with the experimental results in a number of cases. There are 3 figures and 4 non-Soviet-bloc references.

ASSOCIATION: Institut kristallografiii Akademii nauk SSSR
(Institute of Crystallography of the Academy of Sciences
USSR)

PRESENTED: August 2, 1960, by A. V. Shubnikov, Academician

Card 4/6

20636

Accumulations of dislocations in ...

S/020/61/136/006/012/024
B104/B204

SUBMITTED: July 22, 1960

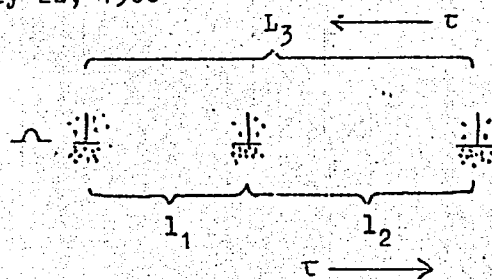$$L_3 \quad \longleftarrow \tau$$

$$l_1 \qquad l_2$$

$$\tau \longrightarrow$$

Fig. 1

Legend to Fig. 1:   Scheme of the formation of dislocation accumulations caused by blocked impurities.

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Accumulations of dislocations in ...

Legend to Fig. 2: Dependence of the length L_n/l_1 of the accumulations and the distances $l_n/l_1 = a_n$ between the dislocations on the number n of dislocations. The lines were calculated from (5) and (6), and the point from (4).

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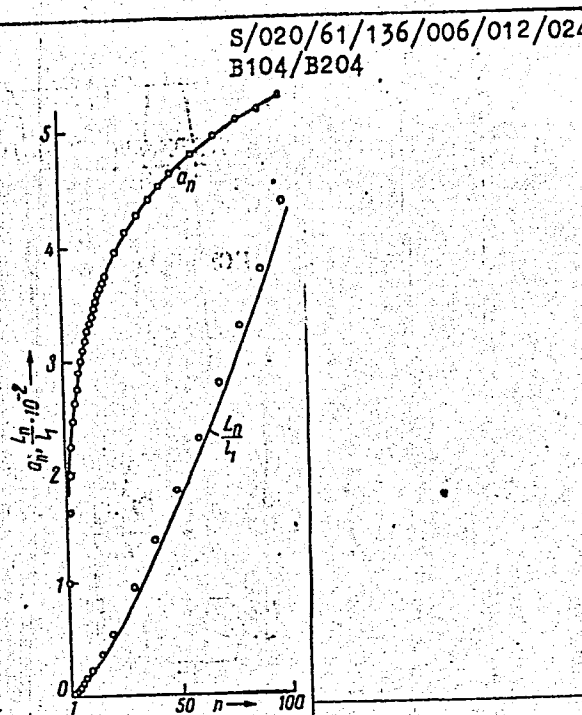
ROZHANSKIY, V. N.

"On the Nature of the Discontinuous Motion of Dislocations of Crystals"
Paper was submitted at the International Conference on Crystal
Lattice Defects at Kyoto, 7-12 Sep '62

Inst. of Crystallography, Acad. of Sci. USSR, Leninsky Prospect 59, Moscow, V-333

ROZHANSKIY,   V. N.

"On the nature of the discontinuous motion of dislocations in crystals."

report to be submitted for the Intl. Symposium on Mechanical Aspects of Lattice defects, (IUPAP) Tokyo, Japan, 2-4 Sept 1962.

S/070/62/007/003/011/026
E132/E460

AUTHORS: Predvoditelev, A.A., Rozhanskiy, V.N., Stepanova, V.M.

TITLE: The dislocation structure arising in crystals of NaCl on deformation by concentrated loads

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 418-424

TEXT: Crystals of NaCl were marked on their (001) faces with a diamond indenter and the dislocation distribution was examined by selective etching. The surface was removed to a depth of some 20 to 30 microns so that the distribution in depth could also be followed.   From this information three dimensional maps of the dislocation structure were drawn out.   The indenter made a square depression with its edges parallel to the $[110]$ and $[1\bar{1}0]$ directions.   The results are qualitatively explained.   The application of a further uniform compression to the crystal could be used to identify sitting dislocations.   It is shown that in NaCl transverse slipping plays an exceptionally great role in the process of the formation of slip bands.   There are 5 figures and 1 table.

Card 1/2

S/070/62/007/004/001/016
E132/E435

AUTHORS: Klassen-Neklyudova, M.V., Rozhanskiy, V.N.

TITLE: Basic tasks in the physics of the rigidity and
            plasticity of crystals

PERIODICAL: Kristallografiya, v.7, no.4, 1962, 499-506 + 1 plate

TEXT: Review article discussing recent work on the mechanical
properties of crystals and its importance in explaining the
characteristics of real materials.   The scope for improving
mechanical properties is indicated as is the importance of the
subject from the point of view of producing new materials.   It is
hoped that Nauchnyy sovet po probleme fiziki tverdogo tela
(Scientific Council for Solid State Physics), created by the
Akademiya nauk SSSR (Academy of Sciences USSR), would coordinate
in this field.   Foreign literature, in translation, on this
subject should be more widely circulated.   Several universities
are extending their courses on the mechanical properties of
crystals and the main task is to produce a detailed theory
explaining the actual properties of real crystals.   A list of
regions in which there is scope for more practical and theoretical
Card 1/2

Basic tasks in the physics ...

S/070/62/007/004/001/016
E132/E435

work is given, these include: influence of impurity atoms on mechanical properties; diffusion and creep --interaction of diffusional and dislocational creep; defects induced by radiation; effects of load and time on deformation at different temperatures; connection of microscopic and macroscopic processes in deformation; fatigue theory which is still rudimentary; development of the crystallography of dislocations and packing defects for different crystal types; interaction of dislocations (this subject has been more successfully studied outside Russia); role and behaviour of electric charges on dislocations; nature of inter-block boundaries; anisotropy in general.
There are 10 figures.

ASSOCIATION: Institut kristallografii AN SSSR
             (Institute of Crystallography AS USSR) .

SUBMITTED: February 7, 1962   .

Card 2/2

ACC NR: AP7005343   SOURCE CODE: UR/0181/67/009/001/0175/0178

AUTHOR: Rozhanskiy, V. N.; Kirichenko, V. V.; Predvoditelev, A. A.

ORG: Institute of Metallography, AN SSSR, Moscow (Institut metallografii AN SSSR)

TITLE: Stabilization of quenching tetrahedra of stacking faults in copper by means of aluminum impurity

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 175-178

TOPIC TAGS: copper, crystal imperfection, annealing, crystal dislocation phenomenon, metal heat treatment, plastic deformation

ABSTRACT: The authors investigated the annealing conditions of quenched copper and alloys of copper with 2 and 7% aluminum by weight, leading to the formation of stacking-fault tetrahedra. The tests were made on samples in the form of small pieces of foil (15 x 15 mm) of 50 μ thickness, heated to 800 - 1000C, and quenched in silicon oil cooled with running water. After quenching, the samples were annealed at 100 - 800C for different lengths of time. Only small prismatic loops were observed in the case of quenching from 800 or 900C. In the case of quenching from 1000C, stacking-fault tetrahedra were observed under certain conditions. Tests have shown that an increase in the aluminum content increased the dimensions of the tetrahedra and also increased their lifetime during the course of annealing. In all cases the tetrahedra did not exceed approximately 600 Å for copper, and up to 10 000 Å for the alloy of copper with 7% aluminum. The mechanism whereby the region of existence of the tetra-

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ACC NR: AP7005343

-hedra broadens with increase of aluminum content is described. Although the presence of the tetrahedra should increase the resistance to plastic deformation, by hindering the motion of the dislocations, no change in the resistance to plastic deformation could be detected by measuring the microhardness; it is therefore concluded that the tetrahedra do not act as major obstacles to the motion of dislocations. Orig. art. has: 3 figures.

SUB CODE: 20/   SUBM DATE: 14Jun66/   ORIG REF: 001/   OTH REF: 007

Card 2/2

L 52517-65   EWT(1)/EWT(m)/EWP(1)/T/EWP(t)/EEC(b)-2/EWP(b)/EWA(c)   P1-4   IJP(c)
                                        JD/GG   UR/0181/65/007/004/1169/1174

ACCESSION NR: AP5010729   43
                                                                            36
AUTHOR: Rozhanskiy, V. N.; Kostikova, K. P.   B

TITLE: Morphology and origin of stacking faults in epitaxial layers

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1169-1174

TOPIC TAGS: epitaxial layer, stacking fault, crystal growth, dislocation motion

ABSTRACT: The authors investigated the configuration of stacking faults in epi-
taxial layers of germanium at the place of their origination on the boundary be-
tween the substrate and the epitaxial layer. The faults were observed in an elec-
tron microscope in transmitted light, at an accelerating voltage 100 kV. The sam-
ple preparation procedure is briefly described. The examination in the electron
microscope has shown that the epitaxial layer is neither homogeneous nor of con-
stant thickness but consists of individual coalesced drops. Single drops take
frequently triangular, rectangular, or quadratic forms, the outlines of which dis-
appear upon coalescence. Several types of classifications are found among the con-
figurations of the stacking faults and are described. The formation of stacking
faults is attributed to oxidation or to capture of impurities, and also splitting

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L 52517-65

ACCESSION NR: AP5010729

of substrate dislocations. "The authors thank N. N. Sheftal', Ye. I. Givargizov, and V. L. Indenbom for useful discussion, and A. N. Stepanova, V. I. Muratova, and Yu. Kostyuk for help with the experiment." Orig. art. has: 6 figures.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography, AN SSSR)

SUBMITTED: 09Nov64   ENCL: 00   SUB CODE: SS

NR REF SOV: 002   OTHER: 010

Card 2/2

L 12913-65   EWT(m)/EWP(t)/EWP(b)   IJP(c)/AS(mp)-2/ASD(a)-5/AFWL/ASD(m)-3/ASD(f)-2/
ACCESSION NR: AP4047323 ESD(t)   JD   S/0020/64/158/004/0835/0838

AUTHORS: Rozhanskiy, V. N.; Predvoditelev, A. A.

TITLE: On the role of diffusion of point defects along disloca-
tions during the course of plastic deformation

SOURCE: AN SSSR. Doklady*, v. 158, no. 4, 1964, 835-838

TOPIC TAGS: crystal lattice defect, dislocation study, plastic
deformation, single crystal, zinc, dislocation motion

ABSTRACT: The diffusion interaction of dislocations, which occurs
with point defects move along a dislocation line, was investigated
in a single-crystal zinc foil obtained by electrolytic polishing
of thin chips cleaved off a large single crystal cooled in liquid
nitrogen. The (0001) plane was strictly oriented parallel to the
surface of the foil. Four types of dislocations were observed in
an electron microscope, with principal attention paid to the cutting

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L 12913-65
ACCESSION NR: AP4047323

of the ring of prismatic dislocations by the motion of edge dislo-
cations during the course of plastic deformation. The coefficient
of diffusion in the interaction of these dislocations is estimated
to be about 10^{-9} cm^2 sec at nearly room temperature, which is some
10 orders of magnitude larger than the coefficient of volume diffu-
sion. This large value of the coefficient shows that dislocations
can serve as efficient channels for transferring point dislocations
between various regions of the crystal. "The authors are deeply
grateful to A. N. Orlov, V. L. Indenbom, A. L. Roytburd for valuable
remarks and Ye. V. Parvova for help with the experiment." This re-
port was presented by G. V. Kurdyumov. Orig. art. has: 3 figures
and 4 formulas.

ASSOCIATION: Institut kristallografii Akademii nauk SSSR (Institute
of Crystallography, Academy of Sciences SSSR); Moskovskiy gosudar-
stvenny*y universitet im. M. V. Lomonosova (Moscow State University)

Card 3)   Card 2/3

ROZHANSKIY, V.N.; BEREZHKOVA, G.V.

Use of electron diffraction microscopy methods in measuring the
flexure of ribbon-shaped crystals caused by axial dislocations.
Dokl. AN SSSR 156 no.6:1339-1340 Je '64.   (MIRA 17:8)

1. Institut kristallografii AN SSSR. Predstavleno akademikom
A.V. Shubnikovym.

L 9050-65   EWG(j)/EWT(m)/EPF(c)/EPR/EWP(s) JW/Pa-4 ESD(gs)/
AFWL/RAEM(c)/RAEM(t)/AS(mp)-2/ASD(a)-5/ESD(t)
ACCESSION NR: AP4044948   S/0181/64/006/009/2745/2749

AUTHOR: Berezhkova, G. V.; Rozhanskiy, V. N.

TITLE: Compounded twins in corundum crystal whiskers

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2745-2749

TOPIC TAGS: corundum crystal, alpha alumina crystal, corundum
whisker, crystal twinning, compounded crystal twinning, crystal
growth, twin whisker

ABSTRACT: A compounded ("polysynthetic") twinning previously observed
in bulk crystals only has been detected in corundum crystal whiskers
by an electron diffraction method. A great number of thin (200 to
500-Å) interlayers parallel to the <1100> direction were observed
across crystal whiskers subjected to abrupt temperature changes dur-
ing the growth process from the vapor phase. Electron diffraction
patterns characteristic of twin crystals indicated that the inter-
layers are twins. This conclusion was confirmed by the observed
system of additional multiple reflections perpendicular to the direc-
tion of the interlayers. With the aid of stereographic projections

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L 9050-65
ACCESSION NR: AP4044948

of the crystal orientation, the reflections were interpreted in terms
of compounded twinning (not previously observed in corundum crystals),
which occurs in the {11$\bar{2}$1}<$\bar{1}$1$\bar{2}$6> system. The strength of twin ribbons
having a 1 x 0.1 scu² cross-section was determined to be higher
(1500 kg/mm²) than that of dislocation-free common ribbons of the
same cross section. This fact seems to contradict the belief that
high strength in crystal whiskers is associated with the perfection
of their structure. Orig. art. has: 5 figures.

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of
Crystallography, AN SSSR)

SUBMITTED: 06Apr64   ATD PRESS: 3110   ENCL: 00

SUB CODE: SS   NO REF SOV: 003   OTHER: 005

Card 2/2

ACCESSION NR: AP4041219   G/0030/64/006/001/0185/0205

AUTHOR: Rozhanskiy, V. N.; Berezhkova, G. V.

TITLE: Electron microscopic investigation of the real structure of corundum whiskers

SOURCE: Physica status solidi, v. 6, no. 1, 1964, 185-205

TOPIC TAGS: crystal structure, acicular crystal, corundum whisker, ruby crystal, axial dislocation

ABSTRACT: An electron diffraction study is reported of α-Al_2O_3 whiskers grown on ruby crystals by heating the latter in a graphite oven in an argon or nitrogen atmosphere to temperatures near the melting point. In most of the cases, the thread-like crystals prepared were oriented along the [0001] direction of the bar (often with an uneven surface and a cross section of 0.1 100 μ) or thin, acicular basal plates (ribbon). The most suitable for the study of dislocation structur were the basal plates. The results of the investigation show that whiskers do not always have axial dislocations. The dislocations lying along

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ACCESSION NR: AP4041219

the axis of the ribbon are edge, screw, or mixed dislocations. Comparison of the experimental data on the basal Burgers vectors with theoretical values published earlier shows that edge dislocations more often have only one Burgers vector, while screw dislocations have several. Axial screw dislocations apparently participate in growth. This is particularly evident in the case of thick ribbons containing a string of axial dislocations. When the direction of growth is changed, this string may maintain the total screw component because rearrangement of the dislocation structure takes place at the bends and a part of the dislocations comes out on the surface. the conclusion may be drawn that axial screw dislocations can participate in the growth of acicular crystals but their chief influence is on thick crystals. The participation of the "layer mechanism," which consists in the origin and directional propagation of layers of growth, is quite obvious in the growth of thin, acicular ribbons, where the role of adsorbed impurities, which hinder crystallization at the surface (where feeding does not ensure active crystallization), is apparently very great. Acicular growth must be considered the consequence of directed feeding and also of the confluence of the crystallization and adsorption processes which retard crystallization. "Acknowledgement is made to V. L. Indenbom and A. A. Chernov for fruitful discussions and advice." Orig. art. has: 16 figures and 23 equations.

Card 2/3

ACCESSION NR: AP4041219

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of Crystallography, Academy of Sciences)

SUBMITTED: 05May64   ENCL: 00

SUB CODE: SS   NO REF SOV: 007   OTHER: 042

Card 3/3

BEREZHKOVA, G.V.; ROZHANSKIY, V.N.

Mechanisms underlying the growth of ionic whiskers from solutions.
Kristallografiia 8 no.3:420-426 My-Je '63.   (MIRA 16:11)

1. Institut kristallografii AN SSSR.

ROZHANSKIY, V.N.; STEPANOVA, V.M.; PARVOVA, Ye.V.; PREDVODITELEV, A.A.

Nature of dislocation jumps in crystals. Fiz. tver. tela 5 no.2:
634-639 F '63.   (MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
i Institut kristallografii AN SSSR, Moskva.
                        (Dislocations in crystals)

L 11090-63   T-2/EPR/EWP(j)/EPF(c)/EWT(1)/EPF(n)-2/EWP(q)/EWT(m)/BDS/EEC(b)-2--AFFTC/ASD
ESD-3/SSD--Ps-4/Pc-4/Pr-4/Pu-4/Pq-4--RM/WW/JD/WH/IJP(C)
ACCESSION NR: AP3000634   S/0181/63/005/005/1479/1480

AUTHOR: Lider, V. V.; Berezhkova, G. V.; Rozhanskiy, V. N.

TITLE: Luminescent fiberlike crystals of sodium chloride

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1479-1480

TOPIC TAGS: luminescent fiber, sodium chloride luminescence, copper impurity
luminescence, silver impurity luminescence

ABSTRACT: The luminescence of crystal fibers of NaCl containing Ag (0.2, 0.4,
0.5, and 0.9% by weight) and Cu (0.1 and 0.2% by weight) impurities has been
observed by a monochromator with a photoelectric unit. The fibers were grown by
using seeds in a saturated solution of NaCl containing long molecular chains
(polyvinyl alcohol in a concentration of 0.03 g/100 cm^3); this process produced
very long fibers. The luminescence was excited by a lamp. Cu^{++} ions were
introduced by addition of a water-soluble salt (CuCl$_2$); fibers grown in this manner
did not luminesce. Ag^{++} ions were introduced by means of a water-soluble complex
[Ag(NH$_3$)$_2$]OH; the silver-containing fibers exhibited blue luminescence when
excited by light in the 250- to 400-mμ band. Studies in an ultraviolet microscope
showed the ions to be incorporated in a nonuniform manner. Separate bright

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L 11090-63
ACCESSION NR: AP3000634

3

luminescence regions were observed in the fiber. It is noted that activated crystal fibers, unlike pure ones, are not fully soluble in water. The undissolved residue forms bent fibers equal in length to the initial fibers (which are up to several tens of centimeters in length). Under ultraviolet light they exhibit a more intense blue luminescence than the initial fibers. Absorption spectra show that during the growth process the crystals capture the polyvinyl alcohol. It is considered that the insoluble residue may form because of the interaction of the alcohol with the silver ions. "In conclusion the authors express deep thanks to Z. B. Perekalinina for her help during the execution of the work and the discussion of the results and to S. V. Grum-Grzhimaylo for the obligingly granted opportunity of working on the ultraviolet microscope." Orig. art. has: 1 figure.

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of Crystallography, AN SSSR)

SUBMITTED: 03Jan63   DATE ACQ: 11Jun63   ENCL: 00

SUB CODE: PH   NO REF SOV: 004   OTHER: 001

Card 2/2

LIDER, V.V.; BEREZHKOVA, G.V.; ROZHANSKIY, V.N.

Luminescent whiskers of sodium chloride. Fiz.tver.tela 5
no.5:1479-1480 My '63.   (MIRA 16:6)

1. Institut kristallografii AN SSSR, Moskva.
        (Luminescence)   (Crystals—Growth)

L 13391-63   EWT(1)/EWP(q)/EWT(m)/BDS/EEC(b)-2   AFFTC/ASD   JD/JG/IJP(C)

ACCESSION NR: AP3000775   S/0070/63/008/003/0420/0426

AUTHOR: Berezhkova, G. V.; Rozhanskiy, V. N.

TITLE: Mechanisms of growing ionic filiform crystals from solutions

SOURCE: Kristallografiya, v. 8, no. 3, 1963, 420-426

TOPIC TAGS: crystal growth, filiform crystal, screw dislocation, alum, KBr, ionic crystal, polyvinyl alcohol

ABSTRACT: The authors have studied the growth of ionic filiform crystals from aqueous solutions through a porous medium and on seed crystals when polyvinyl alcohol is added to the solution. They have established the occurrence of two different growth mechanisms: distinctive "squeezing out" of crystals from pores of the substrate in the first case and growth on screw dislocations in the second. In the first case filiform crystals of alum grow from a substrate of silica gel, and the growth occurs from the base. Crystals of KBr, on the contrary, developing in a solution containing polyvinyl alcohol, grow from the top. The authors show that in the first case the rate of growth does not depend on the cross-sectional dimensions, but in the second the rate is approximately inversely proportional to the thickness of the crystal. The mechanisms of growth are shown schematically

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L 13391-63

ACCESSION NR: AP3000775   3

in Figs. 1 and 2. "In conclusion, the authors express their thanks to
A. A. Chernov and V. Ya. Khaimov-Mal'kov for valuable remarks during discussions
on results of the work." Orig. art. has: 8 figures.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography,
Academy of Sciences SSSR)

SUBMITTED: 28Jul62   DATE ACQ: 21Jun63   ENCL: 02

SUB CODE: 00   NO REF SOV: 007   OTHER: 015

Card 2/2

PREDVODITELEV, A. A.; ROZHANSKIY, V. N.; STEPANOVA, V. M.

Dislocation structure in NaCl crystals resulting from deforma-
tion by concentrated loading. Kristallografiia 7 no.3:418-424
My-Je '62.   (MIRA 16:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova i
Institut kristallografii AN SSSR.

(Salt dislocations in crystals)
(Salt)

S/181/63/005/002/040/051
B102/B186

AUTHORS: Rozhanskiy, V. N., Stepanova, V. M., Parvova, Ye. V., and
             Predvoditelev, A. A.

TITLE: The causes of the jump-like motion of dislocations in crystals

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 634 - 639

TEXT: The formation of etching tracks on the (100) face was investigated
on two types of NaCl crystals of almost equal composition containing the
following impurities Ca 0.05%, Mg 0.001%, Fe 0.03%, Ag 0.1%, Al 0.01%, Sn
0.005%, Si 0.001%. According to the compressibility of the crystals the
rigid type was distinguished from the soft type. The dislocation jumps of
the rigid crystals are about twice as large as those of the soft ones.
(10 and 4.5 μ). V, the velocity of the dislocations was measured in depen-
dence on the stress τ(kg/cm^2). In all cases log V increased linearly with
τ, and decreased linearly with T^{-1}. The straight lines for rigid and soft
crystals are in different positions but parallel. The difference of the
rigid and soft types consists in a different impurity distribution. The
mean dislocation velocity obtained from 20-30 measurements can be described
Card 1/2

The causes of the ...

S/181/63/005/002/040/051
B102/B186

by $\bar{V} = A \exp(-\frac{U-\gamma\tau}{kT})$ or $\bar{V} = A \exp(\gamma\tau - U/kT)$ with U = 0.2 ev,
$\gamma = 3 \cdot 10^{-20}$ cm³, A = 1.1 cm/sec. The first formula is somewhat more probable. The stress and temperature dependence of the mean dislocation velocity is governed by the following factors: periodicity of the potential relief of the lattice, the slowing down at the fixing points that arise because of transverse slipping and cleavage of the moving dislocations in transverse planes; energy spread of the moving dislocations; interaction with point defects and their complexes (impurities, vacancies, interstitial atoms); interaction with other dislocations; interactions with all types of interfaces; interactions with disperse phase separations and interactions with that surface and surface defects. There are 6 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov) Institut kristallografii ANSSSR, Moskva (Institute of Crystallography AS USSR, Moscow)

SUBMITTED: September 26, 1962

Card 2/2

KLASSEN-NEKLYUDOVA, M.V.; ROZHANSKIY, V.N.

Fundamental tasks of physics of the strength and plasticity of
crystals. Kristallografiia 7 no.4:499-506 Jl-Ag '62.

(MIRA 15:11)

1. Institut kristallografii AN SSSR.
      (Crystals) (Strength of materials) (Plasticity)

5(4)

AUTHORS: Dekartova, N. V., Rozhanskiy, V. N.   SOV/20-126-3-40/69

TITLE: An Investigation of the Influence of Surface-active Media Upon
                 Processes of Deformation and Destruction by the Method of Internal
                 Friction (Issledovaniye vliyaniya poverkhnostno-aktivnoy sredy na
                 protsessy deformatsii i razrusheniya metodom vnutrennego treniya)

ABSTRACT: In the introduction to this paper it is stated that by measuring
                 the damping of free torsional oscillation, a deep insight into the
                 mechanism of the displacement of atoms in solids has been
                 obtained, but that this method has not been employed for the
                 purpose of investigating the influence exercised by media upon
                 mechanical properties. Two papers, by V. I. Likhtman and
                 V. S. Ostrovskiy (Refs 1, 2) are mentioned, in which plastic
                 viscosity in the case of steady creeping in dependence on the
                 medium was for the first time investigated, and in which it was
                 found that surface-active media exercise considerable influence.
                 In this connection the effect of the easing of deformation, which
                 was discovered by P. A. Rebinder, is mentioned, and the investigation
                 of the influence exercised by the absorption-active media upon the
Card 1/3   atomic relaxation processes by examining the damping of the free

An Investigation of the Influence of Surface-active Media   SOV/20-126-3-40/69
Upon Processes of Deformation and Destruction by the Method of Internal Friction

torsional oscillations (frequency 7 cycles) is given as the
subject to be dealt with by this paper. Investigations were
carried out on mono- and polycrystalline wires of zinc, cadmium,
copper, and lead with a diameter of 0.8 mm. A 0.2% solution of
oleic acid in vaselin oil was used as surface-active medium. The
results obtained by investigations of monotonic twisting carried
out on samples coated with the oleic acid solution show a
decrease of plastic viscosity. The similar effect produced by
mercury compounds is explained by the diffusion of Hg-atoms into
the sample, and the results obtained by investigations carried
out in this direction are shown by a diagram (Fig 2). In the
following it is shown that the damping of the free oscillation of
zinc-monocrystals increases only little when the solution is used,
and that the method of monotonic twisting is somewhat more
sensitive. In polycrystals, however, a powerful effect is found
to be produced within the temperature range of 20 - 250° C. The
amalgamated monocrystals of zinc show a decrease of internal
friction. The decrease of internal friction by the application of
a mercury film depends on the thickness of the film and on the
Card 2/3   amplitude of torsional oscillation; measuring results are shown by

An Investigation of the Influence of Surface-active Media   SOV/20-126-3-40/69
Upon Processes of Deformation and Destruction by the Method of Internal Friction

a diagram (Fig 3). Finally, the influence exercised by grain size
upon inelastic deformation is investigated, and it is shown that
the latter is localized upon the grain boundaries after amalgam
treatment. The authors thank Academician P. A. Rebinder, Professor
V. I. Likhtman, and Ye. D. Shchukin for investigating the results
obtained and for their valuable advice. There are 4 figures and
7 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
                (Moscow State University imeni M. V. Lomonosov)

PRESENTED: February 23, 1959 by P. A. Rebinder, Academician

SUBMITTED: February 10, 1959.

Card 3/3

DEKARTOVA, N.V.; ROZHANSKIY, V.N.

> Investigating by internal friction the relative surface activity
> of certain metals as compared to zinc. Fiz. met. i metalloved.
> 11 no. 1:138-142 Ja '61.   (MIRA 14:2)
>   (Surface energy)   (Internal friction)

VELLER, V.N., doktor tekhn.nauk; KIRAKOSYANTS, G.A., kand.tekhn.nauk;
LAPUZIN, V.S., inzh.; LEVIN, D.M., inzh.; ROZHANSKIY, V.Ye., inzh.;
RULLIT, R.A., inzh.; FRIDMAN, A.Ye., inzh.

Water system for the regulation of the K-150-130 turbine developed
by the Kharkov Turbo-Generator Plant. Teploenergetika 9 no.11:10-
17 N '62.   (MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut
i Khar'kovskiy turbogenertornyy zavod.
       (Kharkov—Steam turbines) (Hydraulic servomechanisms)

ROZHANSKIY, Yu.

Reefs that hamper skin diving. Tekh.mol. 28 no.8:22-23 '60.
                                                (MIRA 13:9)
1. Predsedatel' tekhnicheskoy komissii Federatsii podvodnogo
sporta.
        (Diving, Submarine--Equipment and supplies)

ROZHANSKIY, Yu.

First steps. Voen.znan. 37 no.4:32-33 Ap '61.   (MIRA 14:4)

1. Zamestitel' predsedatelya Federatsii podvodnogo sporta SSSR.
(Diving, Submarine)

ROZHANSKIY, Z.; POLUEKTOV, I.

Dispatcher-selector unit in grain elevators. Muk.-elev.prom.
20 no.2:21-22 F '54.   (MIRA 7:7)

1. Shcherbakovskiy elevator.
   (Grain elevators) (Radio--Apparatus and supplies)

ROZHANSKIY, Z.
        POLUEKTOV, I.; ROZHANSKIY, Z., glavnyy inzhener.

        We strive for full use of potentials. Muk.-elev.prom.20 no.5:
        20-22 My '54.   (MLRA 7:7)

        1. Direktor Shcherbakovskogo elevatora (for Poluektov)
           (Grain elevators) (Loading and unloading)

ROZHANSKIY, Z.Ye., inzh.

Restoring capacitance to lead battery armor plates. Vest.
elektroprom. 28 no.8:50-52 Ag '57.   (MIRA 10:10)

1.Trest "Akkremmontazh".
                         (Electric batteries)

Rozhansky X.YC.

AUTHOR: Rozhanskiy, Z.E., Engineer.   104-4-32/40

TITLE: Deficiencies of circuits for supplying solenoid drives of
         circuit breakers through a charging handle. (Nedostatki
         skhemy pitaniya solenoidnykh privodov vyklyuchateley cherez
         zaryadnyy)

ABSTRACT: This note criticises an article by Gustov and Zhuk that
           appeared in "Elektricheskie Stantsii", 1955, No.7, which pro-
           posed a supply circuit for the solenoid of circuit breaker
           drives with maximum current consumption by connecting the seg-
           mental commutator through the charging handle. This circuit
           has a number of disadvantages, in particular some of the acc-
           umulator cells are not so fully charged as the others and the
           presence of a connection on the charging handle is somewhat
           restrictive. Another circuit mentioned in the same article
           in which the supply circuit of the circuit breakers is firmly
           connected to 114 cells for 220 V and to 57 cells for 110 V is
1/1   much better.

AVAILABLE:

ROZHANSKIY, Z.L., inzhener.

Repairing storage batteries in groups without disconnecting
from d.c.bus bars. Elek. sta. 27 no.2:39 F '56. (MLRA 9:6)
          (Storage batteries--Repairing)

ROZHANSKIY, Z.Ye., inzhener.

Determining the degree of discharge for batteries operating in
"charge - discharge" conditions with a constantly varying load.
Vest. sviazi 15 no.11:9 N '55.   (MLRA 9:2)

1.Tekhnicheskiy rukovoditel' Khar'kovskoy akkumulyatornoy mon-
tazhnoy i remontno-zaryadnoy stantsii tresta "Akkremmontazh"
Ministerstvo elektropromyshlennosti SSSR.
            (Electric batteries)

ROZHANSKIY, Z.Ye., inzh.; SHRAMKO, Yu.S., tekhnik

Protective circuit using two IT-85 (86) relays and one isolating
coil for the prevention of interphase short-circuits. Energetik 8
no.8:25-26 Ag '60.   (MIRA 13:10)
    (Electric relays)   (Electric protection)

ROZHANSKIY, Zinoviy Yevseyevich; BUKI, Yuriy Markovich; ABRAMOVA,
L.I., dots., otv. red.; NESTERENKO, A.S., red.

[Practical laboratory work on the electrical equipment of
substations] Laboratornyi praktikum po elektrooborudovaniiu
podstantsii. Khar'kov, Izd-vo Khar'kovskogo univ., 1965.
120 p.   (MIRA 18:5)

ROZHANSKIY, Z.Ye., inzh.; SHRAMKO, Yu.S., tekhnik; ZAIKA, N.V., tekhnik;
    YAROSH, Yu.V., tekhnik; ARONSON, V.R., tekhnik

    An impulse signaling device using transistors. Energetik 10
    no.12:17-19 D '62.   (MIRA 16:1)
                (Electric relays)   (Electric networks)

ROZHANSKIY, Z.Ye., inzh.; BUKI, Yu.M., inzh.

Broadening of the setting limits of RT-80 relays. Elek. sta.
34 no.3:82 Mr '63.   (MIRA 16:3)
                        (Electric relays)

KRIVORUKOV, V.L., inzh.; ROZHANSKIY, Z.Ye., inzh.

Charge and discharge devices for conditioning alkaline storage batteries.
Elektrotekhnika 34 no.12:75 D '63.   (MIRA 17:1)

ROZHANSKIY, Z.Ye., inzh.; BUKI, Yu.M., inzh.

Automatic voltage limiter for the idling of welding trans-
formers. Svar. proizv. no.1:34-35 Ja '64.
(MIRA 17:1)

1. Khar'kovskiy stroitel'nyy tekhnikum.

ROZHANSKIY, Z.Ye.; SHRAMKO, Yu.S.; FEDORENKO, F.A.; LYSIKOV, A.N.

Central signaling networks using telephone relays with overlapping
contacts. Prom.energ. 16 no.11:33-34 N '61.   (MIRA 14:10)
       (Electric networks)   (Electric relays)

LOGUTOV, Dmitriy Petrovich; MOISEYENKO, Fedor Potapovich, kand.biolog.
nauk; ROZHAVINA, A., red.; MIKHAYLOV, G., red.; IOAKIMIS, A.,
tekhn.red.

[Classification tables for valuating pine, spruce, fir, oak, ash,
maple, beech, white beech, aspen, birch, alder, linden, and black
locust] Sortimentnye tablitsy dlia taksatsii sosny, eli, pikhty,
duba, iasenia, klena, buka, graba, osiny, berezy, ol'khi, lipy i
akatsii beloi. Izd.2, dop. Kiev, Gos.izd-vo lit-ry po stroit. i
arkhit.USSR, 1959. 865 p.   (MIRA 13:3)
        (Forests and forestry--Valuation)

DRANNIKOV, Abram Markovich, prof., doktor geologo-mineralog.nauk;
     DRANISHNIKOV, P., spetsred.; ROZHAVINA, A., red.; POLTORATSKAYA,
     E., red.; ZELENKOVA, Ye., tekhn.red.

     [Engineering geology] Inzhenernaia geologiia. Kiev, Gos.izd-vo
     lit-ry po stroit. i arkhit. USSR, 1959. 222 p.   (MIRA 12:8)
                         (Engineering geology)